Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

to the number of factors utilized raised to the tenth power, which should be ample for a collection of millions.

The patterns and cores here utilized are taken from the charts of the Larson Single Fingerprint System.—August Vollmer, Berkeley, Cal.

The Larson Single Fingerprint System.—INTRODUCTION—The purpose of this work is to tie the man on the job to the man in the files, if present, regardless of how much of the pattern obtained in the latent. The present work treats each pattern individually in the strictest sense of the word. Not only are patterns filed according to type, but characteristic features of a pattern are so classified that one portion may be searched independent of the other.

Wherever possible rules of procedure as outlined in existing classifications will be followed and the same definitions used. In general the pattern to be identified is classified according to the gross configuration of characteristic formations. This relegates the pattern to its type. There are then several subdivisions according to particular characteristics which tend to differentiate patterns of the same type from each other. These are primary divisions. Next in importance, the pattern is classified according to the general slope of the pattern as a whole. Thus a pattern may slope to the right, the left, or have no inclination whatsoever. Wherever there is a core present further subdivisions are possible. In patterns where there is a core formation still further subdivisions are secured by classifying the ridge surrounding the core. Further subdivisions are secured by the classification of the delta and the first ridge in front of the delta.

TYPES

The types used in this work are similar to those used in the Henry System, namely: *Arches, Loops S Type* or the Henry *Twin Loop* and *Lateral Pocket, Whorls, Central Pockets* and *Combinations* or *Accidentals.*

ARCHES

In patterns of the arch type the ridges run across the pattern and there is usually no delta, but if there is a delta no ridge must intervene between the core and the delta, unless this ridge be part of the delta. There must not be a single recurving ridge. There must be no ridge count. Of all the patterns the arch, because of its often extreme simplicity, gives the most trouble in the attempt to devise a satisfactory and yet simple system of classification. The problem is, given the simplest form of arch, to classify it independently of all other arches. The only safe method is to deal with the individual ridges and classify according to their particular characteristics. In the identification of the simple arch by ridge characteristics, obviously the problem is to find the starting point. It was finally decided to use the first bifurcation at the bottom of the print. If two investigators should vary as to this point they will come together by the ridge sequence, which is ultimately the same.

A. Primary classification.
  I. Natural arch. The simplest form of arch.
  II. Dotted arch. Many dots and very short ridges.

III. Tented arch. Defined according to the Henry System.
IV. Arch approximating loops. In this type there is a core present, an apparent delta or a delta fused with the core.
V. Transitional arch. Intermediate between the natural and the tented arch.
VI. Staircase arch. In this form of pattern there is a characteristic apeparance due to a series of long and short ridges.
VII. Irregular arch. This group is a combination group.

B. Subclassification.

I. Inclination.
  1. Non-inclination.
  2. Inclination to the right.
  3. Inclinaton to the left.

II. According to core, if present. In natural arches there is no core, but there may be one in the tented arches, arches which approximate the central pockets there are the following divisions.
  1. Junctions.
  2. Spiral-like origin.
  3. One rod.
  4. Dots.
  5. One-eyed rod.
  6. Enclosure.
  7. Compound form, which consists of a dot in the apparent delta and a rod for the core.
  8. Enclosure combined with a staple.
  9. Archipelago, which consists of an irregular formation such as might result from a scar.
  10. Forks or bifurcations.
  11. Two forks with inclination in the opposite directions.
  12. Enclosures, staple and dot.
  13. Tented ridges.
  14. More than one rod.

In the case of the tented arches the core may consist of one intricate series of ridges. This net work can be handled by a series of simple formulas.

Forks.—F. R.-L.; that is, the fork opens to the right or left.

Junctions.—J. R.-T.-L. Thus the function may be at the right, top or left side. These may be plain or parted.

III. According to the ridge characteristics.

Wherever there is a core present the first ridge above the core forms the starting point for the enumeration of the ridges. If no core is present the first fork is used. If ever necessary a subsidiary set of ridges have been devised. Here there are several hundred divisions, but the chief point of differentiation from the first set is that there is an exact orientation. That is, if there happens to be five forks and four enclosures it is possible to know where each characteristic is in respect to the other. The chief objection to this set is that it is not as practical for use with latents. Therefore the former set is used in the bureau.

All types of ridge characteristics may be resolved into a few groups. To label a ridge it is essential that its entire course be followed, unless otherwise indicated. The shape assumed will depend upon the pattern, but the character remains the same. The main divisions are as follows:

1. Simple forks.
    a. Right-angled bifurcations, single.
    b. Simple forks, single.
    c. Two bifurcations, the two forks being on the same side.
    d. Two bifurcations, the two forks being on opposite sides.
2. Composites, consisting of junctions, closed formations, and spur-like configurations.
    a. Consists of bifurcations, enclosures and ridges. Here is about as complex an arrangement as may exist, for there may be forks united with enclosures and in addition there may be single or complex ridge systems intervening the branches of the bifurcations. There are three subdivisions and these comprise from 1 to 30 divisions in each.
        i. Mifurcations 1 to 30.
        ii. Enclosures 1 to 30.
        iii. Ridges 1 to 30.
            Recurving ridges.
            Combinations of recurving ridges with enclosures.
            Combinations of recurving ridges with forks, enclosures and ridges.
            Combinations of enclosures and bifurcations.
            Combinations of bifurcations, alone, more than two.
            Bifurcations with included ridges.
3. All natural ridges.
4. Interrupted ridges.
5. Dots.
6. Enclosures.
7. Recurving ridges.
8. Archipelago, such as left by a scar.
9. Adhering ridges.
10. Abrupt or fractional ridges.
11. Combination of two recurving ridges which envelope the pattern.

LOOPS

Loops as to type are defined according to Henry; modified as follows:

When a ridge passing between the core and the detal is part of a simple bifurcation which forms both the core and the delta the pattern is classified as an arch.

A. Primary classification.
    I. Natural loop.

- II. Indented loop.
- III. Aproximating the S type.
- IV. Approximating the central pocket.
- V. Approximating the arch.
- VI. Approximating the tented arch.
- VII. Irregular loop.
- VIII. Adhering ridges.
- IX. Converging ridges.
- X. Bifurcated or the invaded loop.

B. Subclassification.

- I. Inclination of the pattern.
  1. Inclination to the right.
  2. Inclination to the left.
- II. Core. There are approximately 1,000 cores. Every main division is left open so that new ones may be added, if found.

  The subdivisions are as follows:

  1. Combinations.
  2. Composite cores.
  3. Enclosures.
  4. Junctions.
  5. Rods.
  6. Double rods.
  7. Eyed rods.
  8. Multiple rods.
  9. Forks.
  10. Forks and rods.
  11. Staples.
  12. Double staples.
  13. Double staples and rods.
  14. Eyede staples.
  15. Forked staples.
  16. Triple staples.

The foregoing are filed alphabetically.

- III. Envelope. Every ridge characteristic given off the first ridge about the core is identified and labeled. The main divisions are as follows:
  1. Plain envelopes or staples.
  2. Envelopes with one or more bifurcations.
     - a. Eyed envelopes.
     - b. Envelopes with both bifurcations and enclosures.
  3. Junction or connection between two staples.
     - a. One or more enclosure on inside staple.
     - b. One or more forks on inside staple.
     - c. Both enclosures and forks on inside staple.
  4. Horseshoe enclosure which extends either partly or wholly over the top.
     - a. With enclosures.

      - b. With bifurcations.
      - c. With both enclosures and bifurcations.
    - 5. Recurving bifurcation.
      - a. With enclosures.
      - b. With bifurcations.
      - c. With both enclosures and bifurcations.
    - 6. Two recurving ridges.

- IV. Delta. The delta defined as in the Henry System and further classified as follows:
  - 1. Open form.
    - a. Combination of forks and enclosures.
    - b. Dot being the closure.
    - c. Enclosure on one of the diverging ridges.
    - d. Fork on one of the diverging ridges.
    - e. Plain.
    - f. Rod being the closure.
  - 2. Closed form.
    - a. Combination of forks and enclosures.
    - b. Enclosure on one of the diverging ridges.
    - c. Fork on one of the diverging ridges.
    - d. Plain.

Rule.—When there are dots or rods forming the closure the number of each is indicated. In addition to incicating the form of closure the two diverging ridges which constitute the type lines are classified. These type lines are followed from the origin as far as 1 line drawn through the center of the core.

When forks or enclosures are given from the type lines the lines are classified as R, L, M, meaning that the forks are on the right or left side and go in that direction, or that the two diverging lines come together as in the closed form. Here the letter M (meeting) is read, and this is followed by R or L (fork on the left side). If one type line is plain and the other has a fork or enclosure the letters T and L are prefixed to the respective sides. Only the forks and enclosures which come directly from the type lines are considered. O. D. R. P. L. F. means that the delta is of open formation with a dot for the closure. The right type line is plain, while the left has a fork.

V. First ridge in front of the delta. This is the first ridge directly in front of the delta or point of divergence of the type lines. It is classified according to the divisions of ridge characteristics, previously enumerated. If the course of the ridge is long its course is never followed further than the point of recurve at the top. It may be considered limited by a line drawn through the center of the core and is never followed beyond this point of recurve.

S Type

The Henry twinned loop and lateral pocket fall into this division. This pattern is treated as though composed of two distinct loops. There must be two deltas and two sets of recurving, not converging, ridges present.

A. Primary classification.
   I. The patterns here have an ovoid configuration. There are two distinct cores and two separate envelopes.
   II. Same as I, only there it but one envelope, which is common to both cores.
   III. All patterns not in the first two classes, which have two envelopes.
   IV. All patterns not in the other classes which have a common envelope.

B. Subclassification.
   I. Inclination.
      1. None.
      2. To the right.
      3. To the left.
   II. According to the inclination of each core. From here on the formula for the loop which is the uppermost is placed in the numerator of a fraction and that for the lower loop in the denominator.
   III. According to the core of each loop. The formula for the upper loop is placed in the numerator and that for the lower one in the denominator. The ridges are only followed to the place of recurving. The same cores are used here as in the core of loops.
   IV. According to envelope of each loop. If there are two envelopes the formula for the upper loop is placed in the numerator and that of the lower one in the denominator. The same envelopes are used as in loops.
   V. According to the type of delta. The formula for the right hand delta is placed in the numerator and that for the left delta in the denominator.
   VI. According to the first ridge in front of the delta. That in front of the right hand delta is placed in the numerator and that in front of the left delta in the denominator.
   VII. Acording to the exist of the ridges in reference to the deltas. Here there are 30 subdivisions.
   VIII. According to the ridge count. The count for the upper loops is placed in the numerator and that for the lower loop in the denominator. The envelopes are excluded from the count.

WHORLS

In patterns of the whorl type there are two deltas and the ridges made at least more than two complete circuits.

A. Primary divisions.
   I. Circular enclosures. In this division there is one or more enclosures in the center of the pattern. The contour is circular.
   II. Ovoid enclosures. Here there is one or more enclosures, but the pattern as a whole has an ovoid configuration.

- III. Spiral or open origin. The pattern as a whole has a circular contour.
- IV. Spiral open origin. The pattern as a whole has a distinct ovoidal or elliptical appearance.
- V. Adhering or bifurcated ridge type. It is characterized by a series of ridges which are joined to each other either by a series of ridges of the junctional or recurving type or many ridges seem to adhere to one or both sides of the pattern.

B. Subclassifications.

- I. Inclination.
  1. None.
  2. To the right.
  3. To the left.
- II. Cores.
  1. Simple core formation within a circle.
  2. Same as number one, except that some of the central core is united to the enveloping enclosure.
  3. Composite enclosures.
  4. Combinations of two enclosures with minutiæ.
  5. Combinations of three enclosures with minutiæ.
  6. Combinations of four enclosures with minutiæ.
  7. Combinations of more than four enclosures with minutiæ.
  8. Junctional enclosure with adhering ridge form, without enclosure.
  9. Junctional adhering ridge form, without enclosure.
  10. Spirallar origin.
  11. Open cores cut off from the pattern.
  12. Transitional groups, intermediate between the whorl and S types. There are over five hundred of these cores, but each division is left open so that new ones may be added.
- III. Envelopes of whorls.
  1. Spurs and bifurcations from a central enclosure.
  2. Recurving ridge united with the central enclosure.
  3. Combinations of recurving ridges with spurs, bifurcations and the central enclosure.
  4. Adhering ridges combined with the central enclosure.
  5. Simple spirals.
  6. Spirals with bifurcations.
  7. Spirallar recurving ridges.
  8. Spirallar recurving ridge with bifurcations.
  9. Spirallar formation with adhering ridges.
  10. Junctional and combinations.
- IV. According to ridge tracing. Here there are three divisions as in the Henry system. These are the Inner, Meeting and Outer whorls. These divisions depend upon whether the lower limb of the left delta meets, goes on the inner or outer side of the right delta. Use definition given by Henry.

V. According to the type of delta. The same formula is used as before. Here there is this difference, howover, the formula for the right delta is placed in the numerator and that for the left in the denominator.

VI. According to the first ridge in front of the delta. The formula for the ridge in front of the right delta is placed in the numerator and that for the left in the denominator of the fraction.

The Combination Group

This group comprises all of those forms not covered in the other types. The chief combinations are:

I. Arch and loop.
II. Arch and whorl.
III. Arch and central pocket.
IV. Loop and whorl.
V. Loop and central pocket.
VI. More than two loops.
VII. Any other combination.

The above are primary divisions and the subdivisions depend upon the specific forms. As these are compound forms the formulas are expressed as fractions.

The order of sequence is arch, loop, whorl, S type and central pocket.

Thus in classifying the arch and loop combination group the classification of the arch is placed in the numerator and that of the loop in the denominator.

Central Pockets

This type represents a group which is intermediate between the loop on one hand and the whorls on the other. It may possess the characteristics of both the whorl and the loop. It is defined as in the Henry System with this important difference. There may be at least two complete circuits of ridges forming the core and the pattern is still a central pocket. However, if there are more than two the pattern is a whorl.

A. Primary classes.
  I. Open formation with adhering ridges.
  II. Open formation without adhering ridges.
  III. Closed formation with adhering ridges.
  IV. Closed formation without adhering ridges.

B. Subclassification.
  I. Inclination.
    1. To the right.
    2. To the left.
  II. Core formations, same as in whorls.
  III. Envelope formation, same as in whorls.
  IV. Delta, only the external, same as in loops.
  V. First ridge in front of the delta, or external, same as in loops.

—John A. Larson, Police Dept., Berkeley, Calif.